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(54) **MEANS FOR CONNECTING PIPES COMPRISING AN AXIAL PRESS SURFACE TO TAKE AXIAL PRESSURE FROM A PRELOADING TOOL**

MITTEL ZUR VERBINDUNG VON ROHREN MIT EINER AXIALEN DRUCKFLÄCHE ZUR AUFNAHME VON AXIALDRUCK VON EINEM VORBELASTUNGSWERKZEUG

SYSTEME DE RACCORDEMENT DE CANALISATIONS A SURFACE DE PRESSION AXIALE RECEVANT UNE PRESSION AXIALE DE LA PART D'UN OUTIL DE CHARGE PREALABLE

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the hydraulic system (not shown) carrying the hydraulic cylinders 37 in the correct direction with a pressure adjusted according to the joint dimension in question.

[0044] When the end portions 1, 1', the seal 2 and the nut 5 have been subjected to the load specified for the pipe joint dimension, the end portions 1, 1' are held together while the threaded collar 15 is made up to the specified torque.

[0045] The threaded collar 15 is preferably tightened with the nut runner 45. This takes place through the cog wheel 49, which abuts the corresponding teeth 21 of the threaded collar 15, being driven with a specified torque by the driving means 47 of the nut runner 45.

[0046] When the threaded collar 15 has been tightened, the pressure on the preloading tool 25 is relieved, so as to transfer the load to the nut 5 and the threaded collar 15. The preloading tool 25 is opened, retracted from the completed pipe joint, and prepared for the next coupling.

Claims

1. A method of connecting pipes, the pipes having at least at one end thereof a prestressing press surface (23) and at ends thereof a sealing flange (3) with means for accepting a seal (2), one pipe end having a nut (5) with a surface (9) arranged to bear on a flange (3) and arranged also for accepting axial pressure from a preloading tool (25) and the other pipe end having a collar (15) being in threadable relationship with the nut (5), the nut or the collar or both being rotatable on the pipe, the method comprising inserting a seal (2) between the pipe ends, drawing the pipe ends together and **characterised by** fitting the preloading tool (25) around the drawn together pipe ends; and operating the tool (25) so as to; draw the pipe ends into sealing relationship and apply axial prestressing pressure to the nut 5 or the collar 15 so as to compress the seal; and to screw the collar (15) and the nut (5) together; and releasing the prestressing pressure and withdrawing the tool.
2. A method as claimed in claim 1 and wherein the collar (15) is rotatable on the pipe and has a toothed periphery (21) and the preloading tool (25) acts on said periphery (21) to screw said collar (15) and said nut (5) together.
3. A method as claimed in claim 1 or claim 2 and wherein the nut (5) has a flange at the mouth thereof upon which the tool (25) is arranged to bear.
4. A method as claimed in any one of claims 1 to 3 and wherein the nut (5) is rotatable on the pipe.
5. A method as claimed in any one of the preceding claims and wherein the preloading tool (25) has first (27) and second (31) end sections each having two parts (29, 29' and 33, 33') arranged for fitting around the drawn together pipe ends.
6. A method as claimed in claim 5 and wherein the preloading tool (25) has hydraulic means (35,37) for drawing the end sections (27,31) together.
7. A method as claimed in either claim 5 or claim 6 and wherein the preloading tool has a nut runner (45) for driving the toothed periphery (21).
8. A method as claimed in any one of claims 5 to 7 and wherein the preloading tool (25) is arranged for remote operation.
9. A method as claimed in any one of the preceding claims and wherein a length of pipe to be joined to another length of pipe has at both ends thereof a preloading press surface (23) and a sealing flange (3) and means for accepting a seal (2), one pipe end having a nut (5) rotatable thereon and having an internal screw thread and a surface (9) arranged to bear on a flange (3) and arranged also for accepting axial pressure from a preloading tool (25) and the other pipe end having a collar (15) with a surface arranged to bear on a flange (3), the nut (5) and the collar (15) being in threadable relationship.
10. Pipe connection means comprising two pipes and a preloading tool wherein the pipes each have at one end thereof a prestressing press surface (23) and at both ends thereof a sealing flange (3) with means for accepting a seal (2), one pipe end having a nut (5) with a surface (9) arranged to bear on a flange (3) and arranged also for accepting axial pressure from a preloading tool (25) and the other pipe end having a collar (15) in threadable relationship with the nut (5), the nut (5) or the collar (15) or both being rotatable on the pipe, and a seal (2) therefor, **characterised by** a preloading tool (25) having first (27) and second (31) end sections each having two parts (29, 29' and 33, 33') arranged for fitting around the drawn together pipe ends, hydraulic means (35, 37) for drawing the end sections (27,31) together to compress the seal (2) and prestress either the nut (5) or the collar (15), and means (45) for screwing the collar (15) and the nut (5) together.
11. Pipe connection means as claimed in claim 10 and wherein the rotatable nut (5) or collar (15) has a toothed periphery (21).
12. Pipe connection means as claimed in claim 10 or claim 11 and wherein the nut (5) has a flange at the mouth thereof upon which the tool (25) is arranged to bear.